

TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference FP0276PC-NT	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/JP2004/007392	International filing date (day/month/year) 28.05.2004	Priority date (day/month/year) 29.05.2003
International Patent Classification (IPC) or national classification and IPC C04B35/495, 35/499, H01L41/187		
Applicant NGK SPARK PLUG CO., LTD.		

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>2</u> sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>																									
<p>4. This report contains indications relating to the following items:</p> <table><tr><td><input checked="" type="checkbox"/></td><td>Box No. I</td><td>Basis of the report</td></tr><tr><td><input checked="" type="checkbox"/></td><td>Box No. II</td><td>Priority</td></tr><tr><td><input type="checkbox"/></td><td>Box No. III</td><td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td></tr><tr><td><input type="checkbox"/></td><td>Box No. IV</td><td>Lack of unity of invention</td></tr><tr><td><input checked="" type="checkbox"/></td><td>Box No. V</td><td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td></tr><tr><td><input type="checkbox"/></td><td>Box No. VI</td><td>Certain documents cited</td></tr><tr><td><input type="checkbox"/></td><td>Box No. VII</td><td>Certain defects in the international application</td></tr><tr><td><input type="checkbox"/></td><td>Box No. VIII</td><td>Certain observations on the international application</td></tr></table>		<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input checked="" type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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Date of submission of the demand	Date of completion of this report																								
Name and mailing address of the IPEA/JP	Authorized officer																								
Facsimile No.	Telephone No.																								

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/007392

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language _____ which is the language of a translation furnished for the purposes of:

- ☐ international search (Rule 12.3 and 23.1(b))
☐ publication of the international application (Rule 12.4)
☐ international preliminary examination (Rule 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):

☐ the international application as originally filed/furnished

☒ the description:

pages 1-21 as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☒ the claims:

nos. 2-4, 13 as originally filed/furnished

nos.* _____ as amended (together with any statement) under Article 19

nos.* 1, 6-12, 14 received by this Authority on 26.01.2005

nos.* _____ received by this Authority on _____

☒ the drawings:

sheets fig. 1 as originally filed/furnished

sheets* _____ received by this Authority on _____

sheets* _____ received by this Authority on _____

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☒ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☒ the claims, nos. 5

☐ the drawings, sheets/figs _____

☐ the sequence listing (specify): _____

☐ any table(s) related to sequence listing (specify): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages _____

☐ the claims, nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (specify): _____

☐ any table(s) related to sequence listing (specify): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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Box No. II Priority

1. ☐ This report has been established as if no priority had been claimed due to the failure to furnish within the prescribed time limit the requested:
- ☐ copy of the earlier application whose priority has been claimed (Rule 66.7(a)).
- ☐ translation of the earlier application whose priority has been claimed (Rule 66.7(b)).

2. ☐ This report has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rule 64.1). Thus for the purposes of this report, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

Document JP 2003-153426 A, which is the prior application forming the basis for the claim of priority, does not disclose in the initial description the feature of the inclusion of Sb in the piezoelectric ceramic composition or the feature of substituting a portion of the Nb with the aforementioned Sb, which are set forth in the description of the present application. Therefore, the claim for priority cannot be accepted with respect to these features.

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	1-4, 6-14	YES
	Claims		NO
Inventive step (IS)	Claims	1-4, 6-14	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-4, 6-14	YES
	Claims		NO
2. Citations and explanations (Rule 70.7)			
Document 1:	JP 2001-240471 A (Kyocera Corp.), 04 September 2001 (04.09.01), claims; paragraphs [0020] to [0028], [0041] to [0046]; tables 1 to 3		
Document 2:	JP 11-228227 A (Murata Mfg. Co., Ltd.), 24 August 1999 (24.08.99), claims; paragraphs [0001], [0010], [0011]; table 1		
Document 3:	JP 11-228225 A (Murata Mfg. Co., Ltd.), 24 August 1999 (24.08.99), claims; paragraphs [0001], [0011], [0012]; tables 1, 2		
Document 4:	JP 2002-255641 A (Kyocera Corp.), 11 September, 2002 (11.09.02), claims; examples; tables 1, 2 (Family: none)		
Document 5:	JP 11-240750 A (Kyocera Corp.), 07 September 1999 (07.09.99), claims; paragraphs [0025], [0031] (Family: none)		
Document 6:	JP 2002-68835 A (Toyota Central Research And Development Laboratories, Inc.), 08 March 2002 (08.03.02), claims; paragraphs [0025]		
Document 7:	JP 2001-342065 A (Matsushita Electric		

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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

Industrial Co., Ltd.), 11 December 2001
(11.12.01), claims; Paragraphs [0014] to
[0016]

Document 8: JP 2003-206179 A (TDK Corp.), 22 July
2003 (22.07.03), claims

Claims 1-4 and 6-14

The inventions set forth in claims 1-4 and 6-14 involve an inventive step in relation to the documents cited in the international search report. None of documents 1-8 discloses the piezoelectric ceramic composition of the invention set forth in claim 1. Moreover, it would not be easy for a person skilled in the art to conceive of this invention. The inventions set forth in claims 2-4 and 6-14 have the piezoelectric ceramic composition set forth in claim 1 as the matter defining the invention.